1: Genomics 1997 Mar 1;40(2):323-31

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The human MCP-2 gene (SCYA8): cloning, sequence analysis, tissue expression, and assignment to the CC chemokine gene contig on chromosome 17q11.2.

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Monocyte chemotactic proteins (MCPs) form a subfamily of chemokines that recruit leukocytes to sites of inflammation and that may contribute to tumor-associated leukocyte infiltration and to the antiviral state against HIV infection. With the use of degenerate primers that were based on CC chemokine consensus sequences, the known MIP-1 alpha/LD78 alpha, MCP-1, and MCP-3 genes and the previously unidentified eotaxin and MCP-2 genes were isolated from a YAC contig from human chromosome 17q11.2. The amplified genomic MCP-2 fragment was used to isolate an MCP-2 cosmid from which the gene sequence was determined. The MCP-2 gene shares with the MCP-1 and MCP-3 genes a conserved intron-exon structure and a coding nucleotide sequence homology of 77%. By Northern blot analysis the 1.0-kb MCP-2 mRNA was predominantly detectable in the small intestine, peripheral blood, heart, placenta, lung, skeletal muscle, ovary, colon, spinal cord, pancreas, and thymus. Transcripts of 1.5 and 2.4 kb were found in the testis, the small intestine, and the colon. The isolation of the MCP-2 gene from the chemokine contig localized it on YAC clones of chromosome 17q11.2, which also contain the-eotaxin, MCP-1, MCP-3, and NCC-1/MCP-4 genes. The combination of using degenerate primer PCR and YACs illustrates that novel genes can efficiently be isolated from gene cluster contigs with less redundancy and effort than the isolation of novel ESTs.

PMID: 9119400 [PubMed - indexed for MEDLINE]

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